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Scottish Home and Health Department
Scottish Health Service Planning Council

The Role of the Paramedical Professions

A Report by the National Paramedical (Therapeutic) Consultative Committee

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General Introduction

1. This document contains papers produced by each of the sub-committees of the National Paramedical Consultative Committee (Therapeutic) which describe the role of the professions represented by this Committee and which are intended to provide background information to interested parties on the work, origin, and future of each profession.

2. The papers are concerned with the following professions:
(a) Chiropody
(b) Dietetics
(c) Occupational Therapy
(d) Orthoptics
(e) Physiotherapy
(f) Radiography
(g) Remedial Gymnastics
(h) Speech Therapy

3. The papers do not deal with the grading structures of paramedical departments. This is because these structures are broadly the same for all the professions involved and consist of a progression, in order of seniority, from Basic Grade through Senior to Chief or Superintendent. Some professions also have District and some have Area functional heads. There are also, in the senior grades, further sub-divisions according to responsibility. Gradings are determined by the Whitley Council.

4. The NPCC(T) hopes that this document will provide a useful aid to health service and other interested staff in discussion of the paramedical professions.

1 Chiropody

Brief Historical Note on Chiropody

1.1 Chiropody appeared as a separate profession towards the end of the eighteenth century and was subsequently developed gradually throughout the country by private practitioners. The first national body was founded in 1912 to promote Scientific study, training and examinations in chiropody and the first journal—*The Chiropodist*—appeared in 1914. Voluntary foot clinics, which provided free treatment for the poor, were established in England and Scotland between 1919 and 1934. Training schools developed in association with these clinics. The Board of Registration of Medical Auxiliaries, founded by the British Medical Association in 1936 to maintain and publish a register of persons qualified to practice medical auxiliary work, recognised chiropody in 1938 and admitted to their Register members of the five main chiropody associations which had developed up to that time. In 1945, these five associations amalgamated to form the present recognised professional body, The Society of Chiropodists.

1.2 In 1948, following the National Health Service Act of 1946, the foot clinics and associated schools of chiropody came under the control of the NHS. At this time some 400 chiropodists held full or part-time appointments in the hospital service, including 75 in Scotland. The total membership of the Society of Chiropodists in 1949 was 3,792; a further 2,000 chiropodists were members of other organisations.

1.3 The next decade saw little expansion of 'official' chiropody services, but many voluntary schemes for the treatment of the elderly were set up throughout the country by voluntary bodies. The value of these services in maintaining the mobility of the elderly was increasingly recognised, and in 1959 the Minister of Health announced that he was prepared to approve proposals by Local Health Authorities (LHAs) for the provision of chiropody services under Section 28 of the NHS Act. Priority was to be given to the elderly, the physically handicapped and expectant mothers. LHAs were also empowered to give grant aid to voluntary bodies.

1.4 The Professions Supplementary to Medicine Act, 1960, provided for the statutory registration of chiropodists and the first Register, published in 1962, gave impetus to the development of LHA chiropody services. By the end of the seventies, every LHA in the UK was providing chiropody services to 'priority' groups directly or through the agency of voluntary bodies. Preventive school foot health services for children, mobile chiropody units for rural areas, appliance services and foot health education programmes were introduced in many LHA areas during this decade, and chief chiropodists were appointed to organise chiropody services.

The Role and Function of the Chiropodists within the National Health Service

1.5 The Chiropodist Board of the Council for the Professions Supplementary to Medicine defines chiropody thus:

> 'Chiropody comprises the maintenance of the feet in a healthy condition and the treatment of their disabilities by recognised chiropodial methods in which the practitioner has been trained.'

This training enables chiropodists to diagnose and treat patients without medical referral and gives them the ability to distinguish between local and systemic disease in the lower limbs.

1.6 The range of foot disorders encountered and treated by chiropodists is extensive and can be generally classified as:

1. Those associated with general medical or surgical conditions eg diabetes, rheumatoid arthritis and poliomyelitis.
2. Those of local origin associated with structural and functional defects in the lower limbs eg hallux valgus, pes valgus and hallux rigidus.
3. The associated lesions affecting skin and soft tissues such as corns, bursitis, nail dystrophies and local foot infections such as tinea pedis and verrucae.

1.7 While immediate relief from pain is the chiropodist's primary objective, calling for skilled scalpel technique in the treatment of painful corns and callosities and correct topical use of drugs, many patients require long term management of chronic foot disabilities, so that maximum comfort and mobility may be obtained. This is provided by corrective or palliative foot orthoses, prescribed, and manufactured by chiropodists, for individual patients according to their requirements, based on a comprehensive bio-mechanical assessment. The use of local analgesia by injection enables chiropodists to practice procedures such as nail wedge resection and total nail avulsion (partial and total removal of nails). Cryosurgery and ultrasound are also employed by chiropodists in appropriate cases.

1.8 Chiropodists provide advice on all matters concerning foot health, to Health Boards and Social Work and Education Departments as well as to their medical and paramedical colleagues. They are also called upon to speak on the subject of foot care to various organisations and lay groups. In addition, their duties include the provision of foot health education to School Nurses and school children. As part of their treatment routine all chiropodists constantly offer advice on matters of foot care to each patient.

1.9 All Health Boards in Scotland currently provide comprehensive chiropody services to hospitals and to patients in the community belonging to the following priority groups:

1. The elderly
2. The physically handicapped
3. Expectant mothers
4. School children

In hospitals, treatment is provided for both in-patients and out-patients attending specialised clinics such as Diabetic, Orthopaedic, Rheumatoid and Peripheral Vascular Clinics. It is also provided for patients in long stay hospitals. In the community, chiropody is provided in the following establishments:

Day Hospitals
Health Centres
Health Clinics
Schools
Day Centres
Residential Homes

An extensive domiciliary service is also provided.

1.10 In each Health Board Area, there is an Area Chiropodist responsible for managing the service. This officer identifies needs, evaluates priorities, plans the development of the chiropody service in the Area. He is responsible for maintaining professional standards and for monitoring clinical standards. Chiropodists in supervisory posts assist the Area Chiropodist in these duties.

Training

1.11 The course of training in chiropody is a three-year full-time course approved by the Chiropodists Board under the Professions Supplementary to Medicine Act, 1960. Examiners are appointed by the Society of Chiropodists from lists approved by the Royal Colleges. Those successfully completing the course are eligible for State Registration. Training is at present provided in the United Kingdom, at twelve schools recognised by the State Registration Board. In Scotland there are two schools (Glasgow and Edinburgh). Schools recruit students on a national basis, in the same way as Universities and Colleges of Higher Education. There is, at present, a national shortage of chiropodists which has been recognised by the Department of Health and Social Security which has advised an increase of 30% in students qualifying from the Schools. Attempts are being made to expand the two Scottish Schools.

Entrance qualifications

1.12 Students must be 18 years of age by the end of the year of commencement of the course. Minimum qualifications must include passes in the General Certificate of Education or the Scottish Certificate of Education with two passes at 'A' level in the General Certificate of Education or two Higher Grades in the Scottish Certificate of Education—these must include English and a Science subject. As the present number of applications is greatly in excess of places the vast majority of students have qualifications in excess of the minimum required.

Course content

1.13 The course is split into three academic years, all with a common theme, but each year having a specific objective. First year students make a detailed study of the Life Sciences, together with an introduction to anatomy, pathology, podology, biomechanics, orthotics and therapeutics. During the second and third years, these studies are developed, together with the addition of a more detailed study of physiology, psychology, local analgesia, medicine, surgery, dermatology and skin surgery. Theoretical and practical work in chiropody is carried out throughout the three years. The course is fully integrated on a weekly basis, with approximately 50% of the content being practical and 50% theory. This encourages the immediate practical application and reinforcement of theory as it is learned. Because of this, schools require their own clinical facilities, although students and staff in the second and third years spend 25% of their clinical time in other National Health Service clinics.

Organisation of the Profession

Professional bodies

1.14 There are two main professional organisations which exist to regulate the professional and ethical standards of their members;

(a) The Society of Chiropodists
8 Wimpole Street
LONDON W1M 8BX

Designatory Letters: MChS FChS
Monthly Journal: *The Chiropodist*

(b) The Institute of Chiropodists
Ilford House
133 Oxford Street
LONDON W1R 1TD

Designatory Letters: LCh FInstCh
Monthly Journal: *Chiropody Review*

Membership of either body is open to those who have completed an approved three-year course of training and have passed the prescribed professional examinations.

1.15 The Society of Chiropodists, which is the numerically larger of the two bodies, prescribes the Syllabus of Training to be followed by the recognised Schools, and is the qualifying body controlling the professional examinations. The Society also conducts more advanced examinations for the Teacher's Certificate and for Fellowship of the Society. Each organisation has a large number of local branches, operating throughout the UK, where members join together to discuss professional problems and study post-graduate activities. The Society of Chiropodists is the profession's negotiating body on Whitley Council and has two staff representatives on the PTA Council.

Chiropodists board

1.16 The Professions Supplementary to Medicine Act, 1960, provided for the establishment of a Council and Professional Boards. The Chiropodists Board was appointed by the Council in January, 1963. It is the function of the Board to promote high standards of professional education and professional conduct amongst members of the profession. The Board also maintains a register of the names, addresses and qualifications of all persons who are entitled, and apply, to be registered. Those chiropodists, who are so registered, are known as 'State Registered Chiropodists' and are entitled to use the designatory letters SRCh. The Edinburgh and Glasgow Schools of Chiropody are both recognised by the Board.

The two recognised Schools of Chiropody in Scotland are:

1. The Edinburgh School of Chiropody
   81 Newington Road
   EDINBURGH
   EH9 1QW

2. The Glasgow School of Chiropody
   757 Crookston Road
   GLASGOW
   G53 7UA

NHS

1.17 There is currently a total of approximately 400 WTE Chiropodists working in the NHS in Scotland, and in 1980 some 250,000 patients, mainly elderly, received around 1,000,000 treatments in the community. At present chiropody services within the NHS in Scotland are mainly provided by full-time and part-time NHS chiropody staff, with some contractual services on a fee per treatment basis also being utilised from private chiropodists. State Registration is a necessary qualification for employment within the NHS.

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2 Dietetics

The Role of Dietitians

2.1 Dietitians today apply the science of nutrition to the feeding of groups and individuals in health and disease. Primarily they have an advisory and/or teaching role *vis a vis* their fellow professionals in many spheres and the general public. This role can be considered under six main headings:

Preventive

2.2 (a) Liaising with Health Education Departments, schools and various groups in the community to plan and provide nutrition education programmes and campaigns, including in-service training and the production of nutrition education material.
(b) Working with the health care team.
(c) Planning and participating in surveys and research projects which involve assessment of nutritional status.
(d) Speaking to various community groups and organisations.

Therapeutic

2.3 (a) Giving specialist consultative services to physicians and surgeons for patients who require diet therapy. This covers aspects of nutrition applied to the alleviation of illness or disease, and includes various specialities—diabetes, oncology, intensive care, renal conditions, gastroenterology and inherited disorders in children and geriatrics.
(b) Teaching inpatients and outpatients to manage their own dietary treatment and ensuring a supportive follow-up. Such teaching and support may be given on an individual or group basis, in hospital, clinic or health centre.
(c) Advising on the provision of accurately calculated diets for research and investigation to help diagnose rare disorders or develop new forms of treatment.

Advisory

2.4 (a) Advising Health Boards on nutrition and dietetic policy.
(b) Advising and liaising with Social Services Departments, Education Authorities and other organisations.
(c) Advising general practitioners, nursing staff and other health service professionals on nutrition and dietetic problems.
(d) Advising catering departments on the adaptation of menus for individual diets and the nutritive value of foods supplied to staff and patients including psychiatric, mentally handicapped and geriatric patients.
(e) Advising the media, eg participating in TV and radio programmes. Preparing material for newspapers, journals and magazines.

Education

2.5 (a) Teaching nutrition and dietetics to student dietitians and students of many other disciplines in hospitals, universities and colleges.
(b) Giving practical dietetic training to student dietitians in the hospital or community.
(c) Participating in in-service training and post graduate courses for medical, dental, nursing, paramedical and catering staff and other staff.
(d) Writing information literature, including diet sheets, data sheets and professional leaflets.
(e) Advising the public on the nutritional and dietetic use of proprietary products.
(f) Dealing with all nutritional and dietetic queries.

Management

2.6 (a) Planning nutrition and dietetic policy related to national guidelines and local circumstances.
(b) Evaluating nutrition and dietetic practices.
(c) Establishing priorities in areas of limited staff and resources.
(d) Effective organisation of the service.

Research

2.7 Dietitians may be involved in research in any of the above fields. In addition dietitians may be appointed to specific research posts.

Where dietitians work

2.8 Dietitians work in a variety of locations, as follows:

1. Teaching hospitals and their associated units eg Paediatric, Maternity and Out-Patient Departments.

2. Non-teaching and rural general hospitals, and their associated units.
3. Long stay and geriatric hospitals and associated Day Hospitals/Centres.
4. Acute and long stay psychiatric and mental deficiency hospitals.
5. Hospitals and Day Centres for the physically handicapped.
6. Health Centres, Community Clinics and Community generally.
7. Health Education Departments.
8. Research units in hospitals.

2.9 A dietetic service currently run on a district basis may have dietitians working in most of these establishments but based in only a few of them. Specialist dietitians in hospitals may be based within their working units eg Metabolic Ward, Renal Unit, Paediatric Unit.

Training

2.10 In Scotland courses are offered by the following:

College	*Awarding Body*	*Length of Course*	*Course*
Robert Gordon's Institute of Technology, Aberdeen	CNAA	4 years	B.Sc Nutrition and Dietetics
The Queen's College, Glasgow	CNAA	4 years 2 years	B.Sc Dietetics Post Graduate Diploma in Dietetics
Queen Margaret College, Edinburgh	CNAA	4 years	B.Sc Dietetics

All courses include a period of 28 weeks practical experience. This takes place in NHS Dietetic Departments which must be approved by the Dietitians' Board and are situated throughout the UK. Currently 16 of these departments are in the NHS in Scotland.

2.11 It is anticipated that there will be greater involvement by NHS dietitians in these courses in the future.

2.12 Qualified dietitians employed in the NHS work within the general grading structure outlined in the introduction.

Recent Developments and Future Trends

2.13 The role of the dietitian has thus evolved considerably over the last 40 years. Recent increased awareness by the medical profession of the importance of nutrition in acute care is making heavy demands on hospital dietitians. The welcome additional commitment of the NHS to preventive care creates a requirement for more community dietitians to implement nutrition education policies.

2.14 Present staff resources and accommodation are inadequate to meet existing demands and do not allow the profession to make its full contribution to present and future health care in Scotland. It is important to recognise that Dietetic Departments require adequate clerical assistance.

3 Occupational Therapy

Introduction

3.1 Occupational therapy is the treatment of physical and psychiatric conditions through specific selected activities for the purpose of enabling individuals to reach their maximum level of function and independence in all aspects of daily life. Working in association with clinicians of other disciplines, the occupational therapist assesses the physical, psychological and social functions of the patient, identifies areas of dysfunction and involves the patient in a structured programme of activity to overcome disability. The activities selected will relate to the patient's personal, social and economic status and will reflect the environmental factors which govern his lifestyle.

3.2 The philosophy of the profession is based on problem solving and on the use of an exciting diversity of techniques. The emphasis on the patient's ability to function adequately within his own environment requires that the occupational therapist is sensitive to social, technological, demographic and ecological influence and change.

3.3 With ever increasing maturity and experience, the profession is progressively applying a more scientific approach to treatment and to evaluation through research. This is reflected in the new syllabus of the College of Occupational Therapists and in the move towards degree training.

The Role and Function of the Occupational Therapist

3.4 The occupational therapist treats patients of all age groups whose function is impaired by whatever clinical condition, physical, psychological or social. This involves the therapist in inpatient and day care as well as community care.

3.5 The occupational therapist works as a member of a multidisciplinary clinical team, collaboration and co-operation with other disciplines being essential in the rehabilitation process. The membership of the team varies according to the patient's needs, but a therapist will always have direct access to the medical officer in charge of a case. The nature and degree of a therapist's intervention is dependent upon the initial assessment of the patient's sensory, motor, cognitive, social, personal and interpersonal skills.

Therapeutic role

3.6 The therapist utilises activities relating to education, employment, home management, social relationships and recreation, selecting those activities which will ameliorate symptoms and improve function in all aspects of daily living and enable the patient to re-establish a satisfactory lifestyle. Alternative methods of performing tasks may be taught, aids and appliances may be used and adaptations to a home may be initiated.

3.7 Within the framework of these objectives the occupational therapist's intervention will vary according to the area of specialisation. Examples are:

(i) Paediatric services: the activities involving the therapist will relate to behaviour and normal development and to the acquisition of skills. Specialised treatment techniques such as sensory integration may be applied.

(ii) General medicine and surgery, incorporating neurology and surgical neurology, orthopaedics, rheumatology, plastic surgery, oncology: the therapist may specialise in orthotics and prosthetics, in the rehabilitation of stroke patients, in the re-education of the brain damaged, in all instances giving attention to total function.

(iii) Psychiatry, including assessment, treatment and rehabilitation of the full range of mental disorders within the acute services, continued care, rehabilitation, intensive psychiatric care and addiction units: the therapist will give attention to self care, to social skills, to domestic and work competence, to literacy and to leisure interests.

(iv) Geriatric services including geriatric psychiatry: the profession is aware of the critical need for intervention in this area and the occupational therapist is well equipped to assess the needs of the elderly and to re-inforce residual function, particularly in self care and domestic independence.

(v) Mental handicap: the profession identifies with the policy of integration into the community of all but the profoundly handicapped. An educative approach is adopted to the individual's ability to function in all activities of daily living.

Advisory role

3.8 The occupational therapist is concerned with the patient's ability to function within his environment and will advise the multidisciplinary team on functional assessments, and may also advise the patient's family, employer, teachers, home helps etc. The therapist may advise and consult with architects and city planners on the modifications for the individual's immediate environment, or on planning for an improved method for the integration of the disabled.

Educational role

3.9 The therapist has an obligation to educate others, both professional colleagues and the public at large, as to the nature of the profession in order to ensure that professional resources are used to best advantage and not dissipated through misuse. The therapist also has the responsibility to promote an awareness of the needs for increased resources in terms of trained personnel and facilities to ensure that society provides comprehensive rehabilitation services.

Management role

3.10 Management is an integral part of the therapist's responsibility for day to day planning and effective use of resources. At senior level there is an increasing responsibility for budgetary and personnel control.

3.11 The tardy introduction of district management posts in Scotland has disadvantaged Scotland in comparison with England and Wales, where the appointment of district therapists has provided more stable staff structures and the integration of services. The Health Service reorganisation in Scotland, announced in November 1983, provides a further opportunity to establish an improved management structure for and by occupational therapists.

The Employment of Occupational Therapists

3.12 The National Health Service remains the major employing authority of occupational therapists, although, since the implementation of the Social Work (Scotland) Act 1968 an increasing number of therapists have been employed within social work departments, often at the expense of the Health Service. A small number work with voluntary agencies, in special schools and other organisations, as well as in the schools of occupational therapy.

Training

3.13 The three year full-time course leading to the Diploma of the College of Occupational Therapists is provided in three schools in Scotland, two of which are within the health service and one in a central institution.

3.14 The course content includes anatomy, physiology and kinesiology; psychology and sociology; medical sciences, including disorders of the locomotor, nervous and cardiovascular systems; rheumatic, traumatic and orthopaedic disorders; psychiatric and behavioural disorders; and mental handicap. Also included are general concepts and principles of occupational therapy, based on a knowledge of biological, behavioural and medical sciences; practical skills and their selection, adaptation, application and evaluation; management; and a minimum of 1,200 clinical practice hours.

3.15 Responsibility for the training process involves occupational therapy teaching staff within the schools, also practising therapists who supervise students on clinical practice throughout the course.

3.16 The introduction of the new syllabus 'Diploma 1981', requiring each school to submit a curriculum for professional validation with subsequent autonomy in the qualifying of their own students, reflects increasing momentum in the education of the profession. Furthermore, planning for at least one degree course in Scotland is now underway.

The Past and Future of the Profession

3.17 The profession celebrated its jubilee in 1982, marking the 50th anniversary of the former Scottish Association of Occupational Therapists with its initial membership of 11 qualified and practising therapists. Landmarks in the history and development of the profession include the first school of occupational therapy in Edinburgh in 1936, followed in 1962 and 1977 by Glasgow and Aberdeen respectively.

3.18 In 1954 the United Kingdom was one of the founder members of the World Federation of Occupational Therapists.

3.19 The Council for Professions Supplementary to Medicine Act, 1960, gave strength to the profession, by requiring all practising therapists to be state registered.

3.20 Two separate organisations amalgamated in 1974 to become the British Association of Occupational Therapists, shortly after which, in response to the McCarthy report, the association registered as a non-affiliated trade union, and all professional and educational matters were assigned to the subsidiary body, the College of Occupational Therapists.

3.21 Present day trends demonstrate the flexibility and adaptability of the profession in response to social change and new treatment initiatives. Members of the profession face the challenge of society's ageing population, of new science and technology, and of the problems of insufficient manpower.

3.22 Resources are being directed towards new training programmes, with many trained therapists now attaining routes to the degree qualification which will equip them to undertake the management, the evaluation, and the research so essential to this fast growing profession.

4 Orthoptics

Introduction

4.1 Orthoptics was first introduced in the United Kingdom in the nineteenth century, by Dr Ernest Maddox, an ophthalmologist, whose great interest was the orthoptic treatment of squint in children. His daughter, Mary, worked with him and was the first 'orthoptist' in Britain.

4.2 Orthoptics has advanced considerably since its inception, most significantly within the last fifteen years. A much greater understanding of the physiology of vision now exists and this has led to a dramatic change in attitude towards the treatment of strabismus (squint) and its associated disorders, *viz* defective binocular vision, amblyopia (diminished vision), double vision and defective eye movements.

What is Orthoptics?

4.3 Orthoptics is the diagnosis, investigation and treatment of strabismus and associated disorders.

4.4 The ability to use the eyes together (binocular single vision) makes possible accurate judgement of distance and appreciation of the third dimension, and ensures an adequate level of vision in both eyes. Loss of binocular vision can give rise to a disfiguring squint and affect greatly the future of anyone unfortunate enough to develop it. It may result in amblyopia of the squinting eye, double vision with many troublesome side-effects, loss of depth perception and loss of accurate judgement of distance.

4.5 The development of vision and binocular vision commences from birth, is established at five years and is stable at eight years of age. The *critical* developmental period of vision is certainly within the first three years of life. A five year old child is, therefore, visually, very mature and emphasis, obviously, must be placed on early detection of squint, as immediate treatment is essential, if visual excellence is to be maintained, regained or obtained. Failure to detect squint, in childhood, will result in loss of adequate vision in one eye (squinting eye), and loss of binocularity and all its advantages. Loss of binocularity and reduced vision in one eye not only have visual consequences but may also result in work problems, particularly if there is loss of vision in the non-squinting eye in later life. Orthoptics therefore plays a vital role in patient care in childhood and in adult life.

The Current Role and Function of the Orthoptist

4.6 The orthoptist is a member of the ophthalmic team responsible for the diagnosis and treatment of strabismus and related conditions and is directly responsible to the ophthalmologist.

The role of the orthoptist can be thought of as:

Preventive role

Visual screening

4.7 Since many squints occur in children before the age of three, orthoptists now undertake the visual screening of pre-school children to ensure early diagnosis and treatment. The earlier the age of referral after the onset of squint the better the prognosis for the restoration of standard vision in both eyes and for re-establishment of binocular vision. Visual screening by orthoptists of three year old children has proved effective in the detection of squinters, potential squinters and 'straight' amblyopes. Early detection results in a reduction in the total treatment time and time spent away from school. It is therefore visually and educationally beneficial to the patient and financially beneficial to the parent and the health service.

Education

4.8 Much time has been lost in the treatment of squint and associated disorders, due to lack of awareness of the consequences. The orthoptist must therefore liaise with community health groups, schools and health education departments to ensure adequate and accurate orthoptic input into the in-service training of medical personnel, allied disciplines and those in community service. Orthoptists must ensure that the team, whether it be a purely ophthalmic, or multidisciplinary team, within which they work, is aware of the significance and consequences of squint.

Parental education

4.9 Equally important in the treatment of squint and gross visual disfunction is the 'education' of the parent. The orthoptist has to communicate the vital importance of complying with instructions for treatment and the consequences of failure to do so.

Research

4.10 Preventive orthoptics can be undertaken through research to ensure up-to-date, ongoing investigative procedures and innovative treatment regimes.

Diagnostic role

4.11 The aetiology of strabismus is complex and often obscure. Squint occurring in early childhood is often associated with refractive errors, long sight and unequal refractive error in each eye being the most common. This requires suitable spectacle correction before orthoptic treatment is commenced.

4.12 Squint occurring in later childhood or adult life is more complex. It is often the first sign of disease of the central nervous system or indicative of systemic illness, eg multiple sclerosis, cerebral vascular accident, myasthenia gravis, diabetes. Such conditions may result in palsy of one or more of the extra-ocular muscles of the eye and thus give rise to squint. The accurate orthoptic diagnosis of the acquired palsy, the muscle/nerve involved and the degree of involvement may help to pinpoint the underlying condition and is of the utmost importance in the planning of future management.

Monitoring role

4.13 In many cases of acquired ocular muscle paresis active opthalmic treatment cannot be immediately undertaken as the condition may improve or deteriorate. It is the role of the orthoptist, during this period of observation, to monitor any change in the condition, to ensure the patient's ocular comfort and at all times to liaise with the ophthalmologist.

4.14 Many ophthalmologists rely on orthoptists to carry out this function. Their ability to discern detail and note small changes in complex ocular behaviour is extremely important to patient and ophthalmologist.

Investigative role

4.15 In recent years a need for orthoptists to increase their function within the team has arisen. In addition to the day-to-day orthoptic work carried out, many orthoptists are now heavily involved in glaucoma and visual field work. The training and knowledge which they possess make it possible for them to increase their commitment within the ophthalmic field.

Therapeutic role

4.16 Regardless of the changes within the profession in the last few years an orthoptist's remit is still to diagnose and *treat* defective binocular vision. This treatment varies greatly and may be carried out in conjunction with optical and/or surgical correction, with or without the use of drug therapy.

4.17 Orthoptists must not only possess the necessary knowledge to carry out the therapy, but also possess the social skills to enable them to communicate to the parents and patient the importance of carrying out the prescribed treatment.

Advisory role

4.18 It is essential that the orthoptist advises and recommends to the ophthalmologist the most appropriate form of orthoptic treatment in each case. The orthoptist must outline:

—the planned orthoptic treatment
—the aim of this treatment
—difficulties
—alternative methods of treatment

The assessment of each case by the orthoptist and ophthalmologist is continuous throughout the period of hospital attendance.

Management role

4.19 Orthoptists are responsible for the orthoptic management of all patients in their charge and also for the correct implementation of treatment programmes and research projects. They have a duty to uphold professional standards, to ensure knowledge of advances and changes in orthoptic procedures. They must ensure the smooth day to day running of the department.

The Type of Establishment in which Orthoptists Work

4.20 An orthoptist works in the opthalmic department of general hospitals, eye infirmaries, community health centres and is *always* responsible to an opthalmologist. Patients are referred, via the ophthalmologist, from ENT, casualty, paediatrics, geriatrics, community health and many others.

Training

4.21 There is only one school in Scotland, the Lipton Orthoptic Institute, situated within the Glasgow Eye Infirmary.

Duration of Course
Three years (42 weeks per year)

Syllabus
Syllabus for the Diploma of the British Orthoptic Council

Qualifications
Diploma of the British Orthoptic Council (DBO)

Post Graduate Training
Demonstrators Certificate (DBOD)
Teachers Certificate (DBOT)

In-Service Training
In-Service training meetings are held in Scotland, at least twice per year. Staff especially those involved in the training of students, are encouraged to attend the numerous other courses and conferences held at designated centres in the United Kingdom.

Future Developments

4.22 In recent years significant advances have been made in the understanding of the development of vision, as well as of the aetiology and consequence of strabismus and associated disorders. It has become obvious to the profession that there is a need to change and develop orthoptics accordingly.

4.23 It is hoped, therefore, that in the next few years orthoptics will become an all-graduate profession and that this will facilitate continuing curriculum development and increased research leading to further professional opportunities.

4.24 These changes will result in innovative, imaginative and more effective treatment programmes and the development of patient services, thus benefitting the patient visually, educationally and financially.

5 Physiotherapy

Introduction

5.1 The professional society of physiotherapists received its Royal Charter in 1920 and adopted its present title 'The Chartered Society of Physiotherapy' in 1942. There are 21,000 Chartered Physiotherapists subscribing annually.

5.2 State registration was introduced in 1960 and is a requirement for employment in the National Health Service.

5.3 The physiotherapy service carries a major responsibility within the National Health Service for patient's mobility and their return to maximum function. Its role is preventative as well as curative and extends to the active promotion of health as well as the restoration of health and independence to the physically and mentally impaired.

5.4 Physiotherapists assume professional responsibility for their patients and work in close co-operation with other members of the health care team in the execution of a planned treatment programme.

The Role and Function of the Physiotherapist

5.5 The aim of physiotherapy is to develop the maximum potential of the individual for activities at work, at home and during leisure. It is a systematic method of assessing musculo-skeletal and neurological disorders of function, including pain and those of psychosomatic origin, and of dealing with, or preventing, those problems by natural methods based essentially on movement, manual therapy and physical agencies.

5.6 The physiotherapist's role is developing in response to demographic and social changes and the increased need for specialisation as the patterns of morbidity alter and scientific and therapeutic advances occur. There are appropriate applications for physiotherapy. In virtually all fields of medical care and health and while therapeutic care will continue to be an important part of the work, there is an increasing need for the profession to be involved in health education and the care of those in the community with long term problems.

5.7 Hand in hand with the expansion of community care has come an increased recognition of the need to give advice to patients and their families. This teaching function is distinct from and should not be confused with health education which is itself a developing field for physiotherapists neither does it detract from the importance of manual skills and the development of other treatment modalities.

5.8 The physiotherapy service is provided for the population as a whole and normally where it will be most effective. It may be provided in hospitals (general, psychiatric), out-patient and day patients departments, the patient's home, Part III homes, the community, day centres, adult training centres, health centres, rehabilitation centres, schools, sports centres, at work or in private practices.

5.9 Patients are treated and followed through according to their functional need and their physical location. An integrated Area/District physiotherapy service which operates across boundaries to meet the patients needs is required to ensure continuity and progression of care.

The Therapeutic Role of the Physiotherapist

5.10 Because physiotherapists carry a major responsibility for ensuring the mobility and independence levels of patients, their success in achieving this has a considerable effect on the speed of discharge of hospital in-patients, and hence on the bed turnover rate and costs.

5.11 Physiotherapy provides a seven-days-a-week, 24-hours-a-day service within which a frequently used emergency service is provided at weekends and during the night.

5.12 A physiotherapist deals with the patient's functional problems after a medical diagnosis has been made and he/she expects to be in possession of the diagnosis, together with relevant history and known contra-indications, before treating a patient. The treatment programme will be based upon the physiotherapist's own overall clinical assessment of function, taking account of the medical diagnosis.

5.13 Therapeutic intervention is always preceded by detailed assessment of the patient's problems and social, psychological and physical factors are considered. Assessment is often done in association with other members of the therapeutic team.

5.14 Treatment is directed to solving identified problems. Commonly the immediate aims of physiotherapy include relief of pain, the promotion of tissue repair and the restoration of normal function.

5.15 Techniques of treatment include movement therapy given individually or in group activities; hydrotherapy, given to assist or resist movement; manipulative therapy; electrotherapy—ultrasound, interferential therapy, low frequency electrical stimulation of nerve and muscle, ultra-violet radiation; heat therapy—short wave diathermy, microwave and infra-red radiations; cryotherapy—ice packs or bath; provision of aids to mobility eg walking aids and wheelchairs.

5.16 In order to gain full and enthusiastic co-operation a patient is involved in the planning of the aims of treatment and advised about the management of his condition. The attitudes of the relatives and helpers of the severely disabled, of children and of the elderly may be influenced by counselling and they are taught to assist with simple treatment techniques and advised in ways of fostering independence and giving assistance without injury to themselves.

5.17 Specialist physiotherapy is required in almost all medical specialisms, including general medicine and surgery, orthopaedic surgery, geriatric assessment and care, paediatrics, thoracic surgery, neurosurgery, obstetrics, plastic surgery/burns, mental illness and mental deficiency. Examples will illustrate the therapeutic role of the physiotherapist:

5.17.1 *Respiratory Conditions*—In the treatment of respiratory conditions the physiotherapist treats patients who are acutely ill as well as those suffering from a more chronic condition who may require regular admission to hospital. Appropriate treatment techniques are selected which may include breathing exercises, postural drainage and the use of aerosol inhalers, nebulisers, humidifiers and intermittent positive pressure ventilators. Graded therapeutic exercises will limit muscle wasting and other consequences of immobility. Before discharge the patient will be advised on how to carry out home physiotherapy and a home visit may be made before discharge. If continued treatment is required he may attend hospital as an out-patient or have treatment from a community physiotherapist at home. In an intensive care unit the physiotherapist has a vital role to play and a wide range of physiotherapy techniques may be required as frequently the patient has sustained orthopaedic and neurological damage as well as having a respiratory problem. The specialised treatment techniques which would ideally be used for the problems identified must be modified to take account of the multiple pathology. Such a patient presents a complex rehabilitation problem and long continued treatment in hospital or in special rehabilitation or retraining centres is often required.

5.17.2 *Orthopaedic Conditions*—Trauma is frequently sustained by the normally fit person. Treatment is directed to maintenance of fitness within the limitations of any immobilising devices and the subsequent restoration of normal function by soft tissue mobilisation, movement therapy, provision of mobility aids and restoration to normal fitness by group competitive activities and sport. Adjuncts to this regime may include electrotherapy, cryotherapy and hydrotherapy. Lesions in the vertebral column causing neck and back pain may be treated by manipulative therapy, traction, or exercises and will be accompanied by advice regarding prevention of recurrence.

5.17.3 *Paraplegia (due to spinal injury)*—The physiotherapy given in a spinal injuries unit exemplifies the 'enabling' role of the physiotherapist. Treatment is directed towards helping the patient to achieve maximum independence and enjoyment of life by making the most effective use of the physical abilities which he has retained. Injury to his spinal cord will have resulted in loss of function of his lower, and possibly upper, limbs. Early treatment includes respiratory care and passive movement, but this is superseded by vigorous active exercise, selection of a wheelchair and education in its use, instruction in swimming and other sporting activities, and practice in hospital and home of the activities of daily living. Advice and instruction to the relatives as well as to the patient are of great importance.

5.17.4 *Neurological Conditions*—In the stroke patient the aim is the restoration of functional independence and enjoyment of life by re-education of movement in the presence of complicating factors such as spasticity, flaccidity, and perceptual loss. Retraining of movement, in the sequence in which it is developed in the young child, and other types of movement therapy often effect improvement, but the physiotherapist may have to advise use of a walking aid or a wheelchair. Treatment may commence in hospital and be continued at home, out-patient department or day centre. The patient and relatives may join a stroke club and receive continuing advice from the rehabilitation team as well as peer group support. Treatment of a child with cerebral palsy requires specialist movement therapy from birth. Treatment will commence in hospital and home and be continued in the special school. Warm hearted rapport, communication and teaching skills are of primary importance in a long term scheme of treatment in which everyone associated with the child must participate.

The Preventive, Advisory and Educative Role of the Physiotherapist

5.18 The physiotherapist advises medical practitioners and other members of the health care team on physiotherapeutic management and prevention of disorders of function.

5.19 The examples of the therapeutic role have illustrated the inherent requirement for advice (including prophylaxis) and education of patients and their carers.

5.20 The physiotherapist has a growing role in the field of health education, but the availability of established posts is not increasing proportionately. This role includes:

5.20.1 *Health and Safety*—Advice to home helps and home carers, hospital staff, workers in industry and the general public in prevention of back injuries and other trauma. The need for instruction in ergonomics for correct methods of handling and lifting is assuming greater importance in the light of the requirements of the Health and Safety at Work Act, especially for young people and trainees.

5.20.2 *Sports Injuries*—Injuries during sporting activities may often be avoided if appropriate advice is given. Physiotherapists require a sound knowledge of sports techniques, training and coaching to be able to advise on prevention of injuries and they must educate coaches and other personnel in the value of correct immediate first aid.

5.20.3 *Preparation for Childbirth*—Parents are prepared for childbirth by the physiotherapist who gives advice and instruction to the mother which will ease childbirth and prevent post partum complications such as backache, stress incontinence and prolapse.

5.20.4 *Preparation for Retirement*—Physiotherapists co-operate with a multi-disciplinary team to advise the elderly on how to retain good health, mobility and enjoyable purposeful activity.

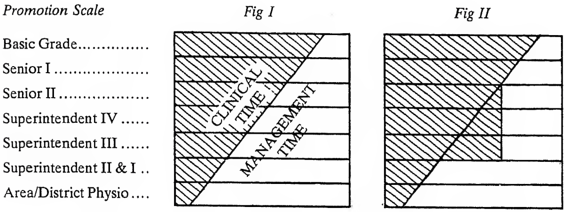
5.20.5 *Fitness*—Advice regarding fitness training and relaxation to relieve stress is increasingly sought by social and industrial groups.

Management

5.21 Physiotherapy is a scarce resource, the use of which needs careful planning and constant re-adjustment to meet changing demands.

5.22 Physiotherapists are committed to providing improved services to patients, for which a sound management framework is essential to facilitate the equitable use of resources and to encourage the inter-professional team approach in the provision of patient care.

5.23 The management component of the work of a physiotherapist increases with seniority—see Figure I. A more desirable scheme, in which seniority may also be gained by clinical specialisation, is indicated in Figure II:



5.24 The functional management of physiotherapy services at District level has been a success, resulting in a more effective and efficient service with improved levels of patient care which could not have been provided by separately organised services at unit level. With the abolition of Districts, Area Management posts are required, in large areas which have a suitable 'District' substructure.

5.25 Involvement in policy decisions and provision of comprehensive information and advice about physiotherapy is desirable at the highest levels.

Education

5.26 There are three schools of physiotherapy in Scotland, admitting 140 students a year. The Queen's College, Glasgow, offers a B.Sc. in Physiotherapy, Queen Margaret College, Edinburgh, and the Grampian School of Physiotherapy run by the Grampian Health Board, offer the Diploma Course of the Chartered Society of Physiotherapy. Successful students from all these courses are eligible for Membership of the Chartered Society of Physiotherapy and for registration by the Physiotherapists Board of the Council for Professions Supplementary to Medicine.

5.27 The current level of qualification acceptable by the Society is a degree or a degree-equivalent course examined by the Society. These courses develop a specific professional summation of knowledge drawn from other disciplines, particularly anatomy, physics, physiology, pathology, kinesiology and applied behavioural sciences. This is applied in clinical studies for which the students affiliate to general and specialist hospital units where they are guided and supervised by senior physiotherapists and are taught by physiotherapy teachers.

5.28 The policy of the Chartered Society of Physiotherapy is to move towards an all graduate profession in order to improve patient services and facilitate adaptation to the rapid social and technological changes in modern society.

Post Registration Education

5.29 Post registration education is essential for all grades of staff throughout their careers. The organisation of in-service education is an integral part of the role of Area/District and superintendent physiotherapists, but this needs to be supported by post registration courses.

5.30 The Chartered Society of Physiotherapy validates courses and its regional and special interest groups run short courses generally related to specific techniques of treatment. The Educational Development Unit for the Remedial Professions initiates and promotes multi-disciplinary courses for the remedial professions. Some Health Boards run management and other short courses to meet specific needs. Jordanhill College of Further Education conducts the teacher training element of the Diploma for Teachers of Physiotherapy. The schools of physiotherapy run courses for clinical supervisors and courses in specialised treatment techniques.

5.31 Improved co-ordination of the present provision of post registration education is required but, most importantly, educational opportunities require to be extended and the resource implications accepted in the interest of the maintenance and development of the service. Consideration should be given to the introduction of a statutory requirement for post registration education for physiotherapists.

5.32 Many physiotherapists have read for degrees with the Open University and an increasing number are involved in research and higher degrees at Universities and Colleges in Scotland.

Future Trends

5.33 The future presents exciting challenges to the physiotherapy profession:

(a) The need for the positive promotion of health is expanding.

(b) The complexity of rehabilitation problems is increasing with advances in medicine and surgery.

(c) The requirement for community physiotherapy is growing with the changing pattern of care and with the increase in the number of handicapped and elderly in the community.

(d) Expansion and development of services for the mentally handicapped and for the young chronic sick will make additional demands upon physiotherapy services.

(e) There is an urgent need to develop a research base in physiotherapy if the skills of the physiotherapist are to be utilised to best advantage. Research is needed to determine the cost effectiveness of treatment and to evaluate, develop and advance treatment methods.

5.34 There are inescapable implications for the development of the service, for the need to provide funds for research and for the pre- and post-registration education of physiotherapists.

6 Radiography

Introduction

6.1 X-rays were first produced in 1895 by Wilhelm Conrad Rontgen and radiography technique and equipment were developed progressively thereafter. The first treatment of carcinoma by radiotherapy took place in 1903 and the first radiotherapy unit was installed, in London, in 1910. The Society of Radiographers including both the undernoted professions, was founded in 1920 and in 1932 the Diploma was instituted. The separation of the two professions took place in 1948 (see below). Many developments have taken place since then, including, in radiotherapy, the development of high energy linear accelerations and neutron beams for clinical use, and the use of combination treatments. Also in radiotherapy the use of computers and CT scanners for treatment planning are recent developments. In radiodiagnostic imaging developments have included the development of ultrasound, nuclear medicine, computerised tomography and daylight processing systems.

6.2 There are two distinct professions referred to as 'radiographers' and whose work is described as 'radiography'. These are:

1. Diagnostic Radiographers who use radiation based imaging techniques for diagnostic purposes; and
2. Therapeutic Radiographers who use radiation based techniques for the planning and treatment of malignant diseases.

The training and work of each group is separate, as are the schools and hospital departments in which they work.

Diagnostic Radiographers—Roles and Function

6.3 A diagnostic radiographer works as part of the medical diagnostic service using X-rays, high frequency sound waves and other radiations to produce medical diagnostic images.

6.4 A diagnostic radiographer's main duties are:

(a) to interpret clinicians requests and perform appropriate imaging techniques;
(b) to understand the diagnostic information required and the most appropriate method of producing this information according to the patients ability and condition to co-operate;
(c) to work with radiologists in more complex diagnostic procedures;
(d) to oversee the processing of films and to control image quality;
(e) to care for the patient;
(f) to further and apply the learning of the discipline;
(g) to maintain professional standards and ethics;
(h) to supervise health and safety at work;
(i) to liaise and co-operate with other members of the NHS team, such as doctors, nurses, paramedical and auxiliary staff; and
(j) to provide a service during normal hours and out of hours.

Senior members of the profession perform highly skilled and specialised work using complex equipment which is often computerised eg neuro-radiology, computerised tomography etc.

Types of Establishment in which Diagnostic Radiographers Work

6.5 (a) In all classes of NHS hospitals, in the Radiodiagnostic Department. These vary in size from single X-ray rooms to approximately 20 X-ray rooms with support facilities. Additionally, radiographers may use mobile equipment on wards and in operating theatres. Within radiodiagnostic departments, diagnostic images are produced using X-rays, radio-isotopes, ultrasound, computerised imaging and specialised photograph. This service is also provided in private hospitals and clinics.

(b) In some modern health centres which have radiographic facilities.

(c) In specialised chest clinics.

Therapeutic Radiographers—Role and Function

6.6 A therapeutic radiographer works as part of an oncology team in the treatment of malignant disease.

6.7 The main duties of a therapeutic radiographer are:

(a) to apply radiation to a patient accurately, as prescribed by a radiation oncologist;
(b) to plan radiation treatments;
(c) to care for the patient;
(d) to apply and update learning;
(e) to maintain professional standards and ethics;
(f) to supervise health and safety at work;
(g) to liaise and co-operate with other members of NHS team, such as doctors, physicists, nurses, paramedical, laboratory and auxiliary staff; and
(h) to provide a service during normal hours and out of hours.

Type of Establishment in which Therapeutic Radiographers Work

6.8 The department of radiation oncology is usually situated in a large hospital serving a wide geographic catchment area. Within this department the therapeutic radiographer will be working with various types and energies of radiations emitted by a variety of units.

6.9 The radiations used are gamma rays, X-rays, neutrons and electrons and these are produced by a variety of equipment such as:

—superficial X-ray units of energies from 10kV to 140kV.
—orthovoltage X-ray units of energies from 200kV to 500kV.
—linear accelerators (megavoltage X-ray units of energies 4MV to 20MV).

These also have an electron facility which can be used for electron therapy with energies at the same values.

—cyclotron for the production of neutrons with a mean energy of 7MV.
—cobalt 60 units to supply gamma rays of energies 1.17MV and 1.33MV.
—simulators which are used for the localization and planning of treatments of malignant disease.
—remote control after-loading radioactive sealed sources for intracavitory work using low and high dose-rates, eg selectron and cathetron.

Training Diagnostic and Therapeutic Radiographers

6.10 Training, which is separate for each part of the profession, extends over three academic years. The training is based in a School of Radiography, or of Radiotherapy, which may be attached to a teaching hospital; or entirely separate but within the NHS, or incorporated into a Further Education College or Polytechnic (in the case of diagnostic radiographers). From this base the students obtain their theoretical knowledge, but they are allocated to radiodiagnostic or radiation oncology departments for practical and clinical training.

6.11 Training standards are regulated by the College of Radiographers, the professional and examining body, in conjunction with CPSM. The College ensures that radiography teachers are qualified to teach; and it provides examiners for the national examination. It also regulates standards by stipulating the minimum educational requirements for acceptance into training. The College sets the professional standards to be recognised by the student body.

6.12 Radiographers who wish to become teachers must obtain the Higher Diploma of the College of Radiographers and a Further Education Teaching Certificate. Other diplomas which may be taken are in Medical Ultrasound, Nuclear Medicine and Management Studies.

The Organisation of the Profession

6.13 The professions are organised, to meet the needs of the NHS, by the PT(A) Whitley Council, in conjunction with the Society of Radiographers and the Council for Professions Supplementary to Medicine.

6.14 Within radiodiagnostic and radiation oncology departments, superintendents are appointed to grades determined by the number of radiographers supervised. Similarly, principal teachers grades are determined by the annual intake of students to a school. Because of the limitations imposed by the staffing structure of radiation oncology departments, therapeutic radiographers with small numbers of staff can never hope to achieve the gradings achieved by diagnostic radiographers. The method of equating grades by numbers is no longer valid for the two professions since their separation in 1948. A document was prepared by the College of Radiographers and the Royal College of Radiologists in December 1979 on 'Radiographer Staffing in Radiotherapy Departments' but its recommendations on this matter have not yet had the approval of the DHSS.

6.15 Until there is some recognition of the difference between diagnostic and therapeutic radiographers the present organisation of the two discriminates against therapeutic radiographers.

Future Trends

Radiotherapy

6.16 It is anticipated that an increase in staffing levels will be required for the following reasons:

(a) The average age of the population is rising, and since the incidence of cancer is highest among the elderly, it is envisaged that there will be an increase in the number of people requiring radiotherapy.

(b) The increasing success of early diagnosis of cancer by means of screening programmes will demand an increase in radiotherapy services.

(c) An increase is currently taking place in the complexity and sophistication of treatment units and techniques, including the following:

—Further incorporation of computers into radiation oncology.
—Use of other radiations eg $\propto$ particles and π Mesons.
—Use of lasers in planning and treatment.
—More precisely directed radiation beams increasing radiation safety.
—Introduction of super-fractionation techniques.

Radiodiagnosis

6.17 The introduction of new imaging modalities, eg ultrasound, computerised tomography, digital vascular imaging, is completely changing the radiographer's role and function. Magnetic resonance imaging is a relatively new technique for demonstrating cross-sectional anatomy using high intensity magnetic fields, and radiographers are likely to be more involved in this technique in the future.

7 Remedial Gymnastics

Introduction

7.1 The origins of the profession of remedial gymnastics lie in the work of the Physical Education Instructors Armed Services' Rehabilitation Units during, and immediately after the Second World War. These Units aimed to rehabilitate injured servicemen into civilian life; and the staff working in them formed the nucleus of the Association (now the Society) of Remedial Gymnasts, which was formed in 1946. The members of the profession work not only in the NHS, but also in Industry, Education and Sport. The profession is state registered.

The Role and Function of the Remedial Gymnast

7.2 In general, remedial gymnastics involves the treatment of disease and injury using all kinds of games, and physical exercise and recreational activity. Remedial gymnasts are trained to give treatment at any stage in the process of physical rehabilitation and to treat patients either individually or in groups. Remedial gymnasts work on all wards, in general and specialised hospitals, in gymnasia, and in rehabilitation units.

Therapeutic and Rehabilitative Role

General

7.3 The remedial gymnast works with a wide range of patients on all hospital wards, from those in an intensive care unit to those who are ambulant and preparing for discharge. Treatment consists of pre- and post-operative care, chest therapy, passive and active exercises, bed exercises, re-education in walking with and without aids, and ice therapy.

7.4 Specialised areas include the rehabilitation of patients who have undergone joint replacement, neurosurgery and head injuries, coronary care patients and those in burns and renal units. Spinal injuries constitute another important area and here sport plays an important role in rehabilitation.

Gymnasium Work

7.5 The remedial gymnast treats a wide variety of patients in the gymnasium. These patients may have all types of head injuries and of orthopaedic or neurological conditions, and may be stroke patients, amputees, or coronary, chest and psychiatric patients. They may be treated individually or, more usually, in a group situation (an area of rehabilitation where the remedial gymnast is particularly proficient), or through games and activities using the remedial gymnast's skill as a recreational therapist. During out-patient work, the remedial gymnast will make use of such techniques as sling suspension and pulleys to mobilise stiff joints, and springs, weights and pulleys to strengthen weak muscles. Ice therapy, traction and many other techniques may also be used.

Hydrotherapy

7.6 The remedial gymnast uses the warm and physically supportive medium of water to treat patients individually or in groups. A training pool, if available, or a session in public baths, can be used in the treatment of patients suffering from back complaints, cerebral palsy, paraplegia, or patients in the later stages of recovery from fractures of the lower limbs. Assisted or resisted exercise can be employed by the use of floats or paddles. Swimming itself can be of great therapeutic value and is an integral part of treatment in the hydrotherapy pool.

Obstetrics and Gynaecology

7.7 The remedial gymnast teaches the art of controlled breathing, muscular control to cope with postural changes and relaxation technique to the ante-natal patient. Post-natal classes deal with re-education of normal posture, relaxation, lifting techniques and restoration of pelvic floor muscles. The main aim of the remedial gymnast in gynaecology is to teach general pre- and post-operative procedure and re-education of the muscles of the pelvic floor.

Paediatrics

7.8 Remedial gymnasts treat children suffering from orthopaedic conditions and neurological or muscular disorders eg cerebral palsy, spina bifida and muscular dystrophy. Advice is given to parents regarding handling, playing, and exercises with these children. The children are taught functional activities, such as coping with calipers, in order that they may lead as normal a life as possible. Swimming and sport play an important part in the rehabilitation of children.

Psychiatry

7.9 The remedial gymnast treats a wide range of patients suffering from mental illness and mental handicap. Recreational therapy and group exercises, which help patients to regain their mobility and confidence, are beneficial to most psychiatric conditions. Relaxation techniques are taught, either individually, or in groups, depending upon the condition. There are also patients in psychiatric wards who have non-psychiatric conditions which can be treated by remedial gymnasts.

Geriatrics

7.10 The aim of geriatric rehabilitation is to improve or maintain independence where possible. Many elderly people suffer from strokes, Parkinson's Disease, chest conditions, confusion, arthritis, loss of mobility etc and treatment may be in their own home or in hospital. The remedial gymnast may use individual and group exercise to strengthen muscles, improve co-ordination and balance. Recreational therapy is used to introduce a competitive spirit and to provide enjoyment for these patients. Advice on walking aids and on safety in the home may be needed to maintain independence.

Community

7.11 Treatment of patients in their own home is a relatively new, but expanding, sphere of work for the remedial gymnast. Treatments are, of course, tailored to the individual, with much time spent on advice to relatives and patients, and on liaison with other paramedical staff, community nurses, doctors and the social services to ensure a co-ordinated approach.

7.12 Treatment consists of specific exercises, positioning in a chair or in bed, assessment for walking aids and wheelchairs, walking re-education, and ice therapy. Patients resident in Local Authority accommodation may be referred and in such cases advice must be given to the staff, as well as treatment to the patient.

Preventive role (and sports medicine)

7.13 These are new and expanding fields in which the remedial gymnast is playing a vital role. Combining his knowledge of clinical conditions with his expertise in exercise therapy and advanced training techniques, the remedial gymnast is in a position to take the lead and set high standards within these fields.

7.14 The work in these areas includes programmes aimed at cardiovascular fitness, coronary rehabilitation, relaxation and the prevention of lower back pain.

Organisation of the Profession

7.15 The patron of the Society of Remedial Gymnastics and Recreational Therapy is Lord Vaizey and the Honorary President is Professor P R F Bell MD FRCS. Scotland has one representative on each of the main governing bodies, that is The Council of Remedial Gymnastics and Recreational Therapy, and The Council for Professions Supplementary to Medicine.

7.16 The Council of Remedial Gymnastics consists of members from each of the regions. The Society has representation on Whitley Council.

7.17 The organisation of hospital departments varies from place to place, as does the number of remedial gymnasts in the department.

Education and Training

7.18 There are two methods of entry into the profession:

(a) A three year training scheme is provided at the NHS training school at Pinderfields College of Remedial Gymnastics and Recreational Therapy. There is also the Forces Training College at Woolwich.

(b) A two year training scheme, available to those who have previously obtained either the Advanced Certificate of Physical Training in HM Forces, the Diploma of Physical Education, or who are Physical Education Instructors in the Prison Service or HM Forces.

Content of three year training scheme

7.19 The first year of the three year training scheme is mostly theory-based, and involves the student in learning anatomy, physiology and physical education. Towards the end of this year the student gets an insight into work in wards and rehabilitation centres. The second year is split into theory (the clinical aspects of body mechanics (kinesiology) and the pathology and treatment of clinical conditions) and practice (clinical work under supervision in wards and rehabilitation centres). The final (salaried) year is spent in selected hospitals and rehabilitation centres throughout the country. The student is under supervision from his or her clinical instructor whose final reports help to determine whether the student is eligible for Membership of the Society of Remedial Gymnasts—State Registration is necessary for a remedial gymnast to work in the NHS.

Future Trends

7.20 The priority services for the future seem to be the mentally handicapped, the mentally ill, the elderly, and those sections of the population at risk, for example, the executive, the sportsman and the unemployed. Maintenance and improvement of the general health of the community by means of preventive medicine programmes, is also a priority, since it reduces the dependency of the community upon hosptial services.

8 Speech Therapy

Introduction

8.1 Systematic therapy for speech and language disorders in Britain began in the first decade of this century, but it was not until the period between the world wars that local authorities began to provide clinics for children. The need for speech therapy for young people with head injuries was demonstrated during the Second World War when Professor Norman Dott established a rehabilitation team for neurosurgical cases at Bangour Hospital.

8.2 The Glasgow School of Speech Therapy, the first training school in Scotland, was founded in 1935 and the College of Speech Therapists was created in 1945, when a common examination syllabus for the Licentiateship of the College was offered; the first students to take this examination qualifying in 1948.

8.3 Following the Report of the Committee of Enquiry into Speech Therapy services (Chairman—Professor R Quirk) and the 1974 re-organisation of the National Health Service, speech therapists formerly employed by local authorities transferred to the National Health Service with the aim of providing an integrated service to all and of bringing together the educational and medical bases of the profession.

8.4 Speech therapists are not numbered among the professions supplementary to medicine but remain an independent profession, being responsible for the diagnosis of the patient's language problem and for determining appropriate management.

The Role and Function of the Speech Therapist

8.5 A comprehensive definition of the speech therapist's role is the assessment, diagnosis, and treatment of disorders of human communication which may include non-verbal, as well as verbal, communication.

These disorders may be classified as those of language, articulation, fluency and voice and may be developmental or acquired. In addition to specific patient care, speech therapists may have advisory, educational, research and management functions.

Assessment, diagnosis and treatment

8.6 Whilst the diagnosis of pathological conditions is the responsibility of the medical practitioner, the speech therapist's expertise in assessing the type and degree of specific language disorder forms a major part of clinical practice. Language pathology is grounded in the study of linguistics, psychology and physiology; and the therapist uses this knowledge to describe the patient's presenting language function by applying standardized tests, by careful case history taking, by observation and by taking account of, for example, audiometric and psychometric reports sought from relevant disciplines. The conclusions reached provide a differential diagnosis upon which therapeutic management is planned and implemented.

8.7 The speech and language disorders of children seen by speech therapists do not always have a clearly demonstrable underlying pathology. Those disorders which are pathologically based fall into four main categories:

(a) Hearing impairment which is the main cause of delayed language acquisition and the first factor to be considered when a child is referred to a speech therapist.

(b) Mental retardation which, regardless of its basic aetiology imposes constraints upon language learning ability.

(c) Brain damage resulting in cerebal palsy which, with its consequent impairment of motor control, restricts the child's ability to express his thoughts and communicate through speech.

(d) Congenital oro-facial anomalies which may also cause children to suffer from communication problems more complex than poor articulation.

8.8 With the majority of children, where there is no obvious cause of delayed, or deviant, language development, factors such as slow maturation, environmental deprivation, familial disposition or emotional disturbance, in isolation or combination, may contribute to the disordered language. In addition to children's expressive ability, understanding of language may also be impaired. Language can be described in terms of three main components: phonology (the sound system), grammar (the structure) and semantics (the organisation of meaning in language). All or one of these may be affected to a greater or lesser degree. The most obvious manifestation is delay or disorder in the development of the sound system. Disturbances of fluency (stammering) can occur in children. This may be a normal and temporary stage of development or the symptoms may persist. Speech therapists are responsible for assessing these children and provide treatment when required. More rarely disturbance of voicing occurs in children, and this can have an organic or a psychological base.

8.9 Classification of the disorders seen by speech therapists is often complex. Even when there is a clearly demonstrable pathological base, the effect on communication is likely to be complex and to cut across different levels of language. For example, a child with a hearing impairment is likely to suffer from delay in the development of grammar and meaning, to have difficulty in articulating the sounds of language and to show disturbances of rhythm and voicing. Similarly, secondary disorders, such as hearing impairment superimposed on the primary disability of a cleft palate, may result not only in disturbances of resonance and articulation but also cause a general language delay.

8.10 In the adult population acquired communication disorders arise mainly as a result of illness or injury imposed upon speech, voice and language systems which are presumed to have been acquired normally in childhood. The exceptions are persons with disorders of fluency which rarely can develop in early adolescence; and those referred to above with persisting motor, sensory and intellectual deficits, where speech and language have never been fully developed. The most common causes of acquired disorder are cerebro-vascular accidents, head injury and progressive disorders of the central nervous system. The type and severity of the communication disorder is dependent upon the site and extent of the neurological lesion. Referral for speech therapy should therefore be available to all hospital specialties and the primary care services, where such groups of patients are treated. The third category of patients is those with voice disorders of an organic or functional nature ranging from vocal abuse to laryngectomy. These patients are only treated by a speech therapist following an otolaryngological examination and so historically, the earliest established speech therapy departments were associated with Ear, Nose and Throat departments of general hospitals. The relatively recent expansion of the services to geriatric and rehabilitation departments reflects the prevalence of stroke in the surviving and increasing numbers of the elderly and the incidence of head injury in road traffic accidents.

8.11 In many cases direct treatment is provided immediately, using specific techniques to train, elicit or stimulate the areas of delayed, deviant or deficient functioning. Patients may be seen individually or in groups, on an intensive daily basis or at less frequent, though regular, sessions. Some examples are a comprehensive language acquisition programme based on developmental theory for a pre-school child; a gestural, non-verbal communication system for the mentally handicapped; specific articulation exercises for a cleft palate child; auditory training, listening tasks, and re-education of reading skills for a head injured patient; and training intonation patterns with a hearing impaired child and assistance with feeding practice as a pre-requisite to early language stimulation for a cerebral palsied child.

8.12 Therapeutic intervention is provided not only by direct patient therapist contact. Counselling and advising patients and relatives, in addition to or instead of direct therapeutic intervention, is an integral part of patient management. For example, relatives will be given advice on general management, shown how to reinforce the speech therapist's sessions with the patient or carry out therapeutic techniques devised by the therapist. In some cases counselling will be aimed at influencing relatives' attitudes to the language handicapped patient.

8.13 Direct intervention will not be the best course of action for some patients and the speech therapist may make alternative recommendations to improve their communicative ability. For example, where the severity of a patient's handicap precludes the acquisition/attainment of effective vocal language, an electronic communication device may be recommended. In some cases action might be taken to alter a patient's environment to one more favourable to developing communication. An example of such action would be finding a placement for a child in a nursery school if adequate linguistic stimulation appears to be lacking in the home.

Advisory and educational functions

8.14 An aspect of the speech therapist's work, which has been developing in recent years, is the role of adviser to the other professionals. Possessing an unequalled expertise in the field of impaired communication, the speech therapist is uniquely qualified to act as adviser and source of information to teachers, whether they work in nursery schools, establishments for children with special needs or mainstream education; to medical; nursing and paramedical colleagues in hospitals and the community, to social workers and to voluntary agencies concerned with after care.

8.15 An example of this role is the guidance and advice speech therapists can offer to stroke groups and clubs. The voluntary workers in these groups provide stimulation and encouragement to long term stroke patients. When this can be supported by professional expertise it is of increased value to participants in these groups.

8.16 Educational and advisory functions are increasingly being extended to the lay population. Speech therapists are frequently called upon to give general talks about their work to interested groups. In some cases this may fulfil a preventive function, for example, in talking to mothers of young children the opportunity to stress the need for adequate linguistic stimulation for satisfactory language acquisition can be utilised.

8.17 The steadily increasing demand for such help from speech therapy is an encouraging sign that the profession's expertise is at last being recognised; and, although the range of work involved makes heavy demands on present slender resources, continued expansion in this field is anticipated.

Management

8.18 All speech therapists are required to manage their clinical practice by keeping records, writing reports, requesting equipment and perhaps making appointments. There is often a serious lack of support services to relieve the clerical component of the therapists everyday work, with consequent detriment to the delivery of services.

8.19 The career structure provides for supervisory grades, but many heads of department continue to have a heavy clinical commitment. Supervisors practise day to day management in advising and counselling staff on professional and personnel matters, time tabling, ordering equipment, and making statistical returns. In addition many develop specialist clinical expertise and are available for advice and in-service training to departments on an Area basis. Senior management posts at Area level have responsibility for planning and policy making and for organising and monitoring the delivery of services. Tasks will include recruitment and deployment of staff, budget control and liaison with medical, nursing and administrative departments. There must be communication with the regional authorities, particularly with education and social service departments. Liaison and co-operation between area managers and training establishments is important for placing students requiring clinical practice.

The Types of Establishments in which the Speech Therapist Works

8.20 *Community Services:* Speech therapy clinics are located in many different units and this variety is due partly to the pattern of services developed prior to the 1974 and 1975 reorganisations of the National Health Service and of Local Authorities and to differing policies in deployment, manpower supply and existing provision of community facilities, such as health centres, by Health Boards.

8.21 Deployment of staff is also related to varying provision of units, including Language Units, to meet the special educational needs of chidren who are the responsibility of Regional Education Authorities.

8.22 The following list indicates the wide range of units where services may be located, in addition to purpose-built departments:

Nursery schools and classes; primary and secondary schools; children's centres; language units; special education centres; child guidance centres; schools for children with special educational needs of a pronounced, specific or complex character; health centres and clinics; adult training centres; centres for the physically handicapped; patients domicile; premises of voluntary agencies; service to certain voluntary agencies.

8.23 *Hospital Services:* Reference has been made to services which were established within Ear, Nose and Throat departments. Today, patients requiring speech therapy will be found in the specialties listed below:

ENT Surgery
Plastic Surgery
General Medicine
Rehabilitation
Medical Paediatrics
Geriatric Long Stay
Child Psychiatry
GP Acute
Psychogeriatrics
Mental Illness
General Surgery
Neurosurgery
Dental Surgery
Neurology
Surgical Paediatrics
Geriatric Assessment
Young Chronic Sick
Mental Handicap
Orthopaedic Surgery
Radiotherapy

Training

8.24 There are currently two training establishments in Scotland, one at Jordanhill College of Education, Glasgow, offering a B.Sc. degree in Speech Pathology and Therapeutics and the other at Queen Margaret College, Edinburgh, where students study for a B.Sc. degree in Speech Pathology and Therapy. To provide the background necessary to assess the nature and causes of the wide variety of communication problems and to treat these disorders, students study a wide range of academic subjects. These include anatomy, neurology, physiology, psychology and linguistics in addition to language pathology. Observation and clinical practice under the guidance of speech therapists working in the NHS is an essential part of both courses.

Organisation

8.25 The organisation of services still varies from area to area and in some cases may be subject to further change as a result of the present re-organisation of the NHS. The aim however is to offer treatment as conveniently as possible to all who may benefit by—or 'from' it, whether this is on a totally integrated basis, with all staff treating a wide range of patient categories in a variety of locations as is the case in the smaller single district areas, or in the co-ordinated services of large multi-district areas where hospital departments may have regional specialities and wide ranging community sectors serving, for example, special schools and language units as well as health centres and main stream education establishments. The list of types of establishments in paragraphs 8.22–23 indicates the breadth of the service and, locally, this will be organised to take account not only of health board functions but also of the available accommodation and manpower supply position. It is to be regretted that there are still a few areas where co-ordinated or integrated services have not been developed and also some where Area Speech Therapists have not been appointed.

Recent Developments and Future Trends

8.26 In accordance with the recommendations of the Quirk Report and as a result of the unification of the service, considerable expansion of treatment of the under-fives, the elderly and the mentally handicapped has taken place; the development of electronic communication aids and non-vocal systems such as Blissymbolics and Makaton have helped those with severe speech handicap. The advisory and teaching role of speech therapists has expanded with the growth of multi-disciplinary patient care.

8.27 There are still many areas of concern. The quality of service offered to patients is uneven, as there are geographical areas and patient groups which are underserved due to inadequate staffing and poor working conditions; and there is an urgent need to provide guidelines as to appropriate caseloads, basic clinical accommodation and support services.

8.28 It is felt by many that the professional title does not adequately describe the scope of the work carried out—that 'speech' is limited to one aspect of communication and that 'therapist' relates only to remedial work.

8.29 As graduate training becomes universal, there must be more opportunity for post-graduate qualification and, in particular, research must be fostered. Priority areas for basic and applied research must be identified and might include the natural history of speech and language disorders, the incidence and prevalence of conditions and the evaluation of treatment techniques.

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